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 ... 307 of the **fingerprint scanner** is attached to an illuminator the object via the fingerprint image light source, enclosure 308 that secures the first LED 302 and ...
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 ... a person wants to use the card (12), the card (12) is inserted into a card reader (22) and the person's finger is scanned by a **fingerprint scanner** (24) which ...
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A Sugiura, Y Koseki - Proceedings of the 11th annual ACM symposium on User ..., 1998 - inf.ufsc.br
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AC Weaver - Computer, 2006 - doi.ieeecomputersociety.org
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IEEE JNL IEEE Journal or Magazine

IET JNL IET Journal or Magazine

IEEE CNF IEEE Conference Proceeding

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IEEE STD IEEE Standard

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IEEE STD IEEE Standard

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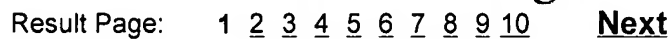
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US-PAT-NO: 5869822

DOCUMENT-IDENTIFIER: US 5869822 A

TITLE: Automated fingerprint identification system

US Patent No. - PN (1):

5869822

Detailed Description Text - DETX (12):

The display panel 30, as shown in FIG. 1, incorporates a start button 32 that when pressed, allows the system 10 to commence operation, as shown in FIGS. 1 and 2, a PASS LED 34, a FAIL LED 36 that when lit indicates that the credit card is valid or invalid respectfully and a TRY AGAIN LED 38 that when lit indicates that the system 10 has obtained marginal results and therefore the card presenter is requested to try again.



US005869822A

United States Patent [19][11] **Patent Number:** 5,869,822**Meadows, II et al.**[45] **Date of Patent:** Feb. 9, 1999**[54] AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM***Attorney, Agent, or Firm*—Albert O. Cota**[57] ABSTRACT**

[76] Inventors: **Dexter L. Meadows, II**, 376 E. Alameda, Altadena, Calif. 91001; **Allen J. Pouratian**, 717 N. Bedford Dr., Beverly Hills, Calif. 90210

An automated fingerprint identification system (10), which utilizes an encoded identification card, such as a credit card (12). When a person applies for a credit card (12) they must register a finger of their choice with the card issuance company. At the company, the finger is scanned and a composite number (14) is produced that consists of several fingerprint identifying parameters. The composite number (14), corresponding to the fingerprint is encoded onto the card (12) and is also stored in a card database (50) and/or a server database (52). When a person wants to use the card (12), the card (12) is inserted into a card reader (22) and the person's finger is scanned by a fingerprint scanner (24) which produces a composite number (14) that is compared with the composite number (14) in the card or server database (50, 52). If the two composite numbers (14) are similar, use of the card is allowed. Conversely, if they are not similar, use of the card is disallowed.

[21] Appl. No.: 727,846

[22] Filed: Oct. 4, 1996

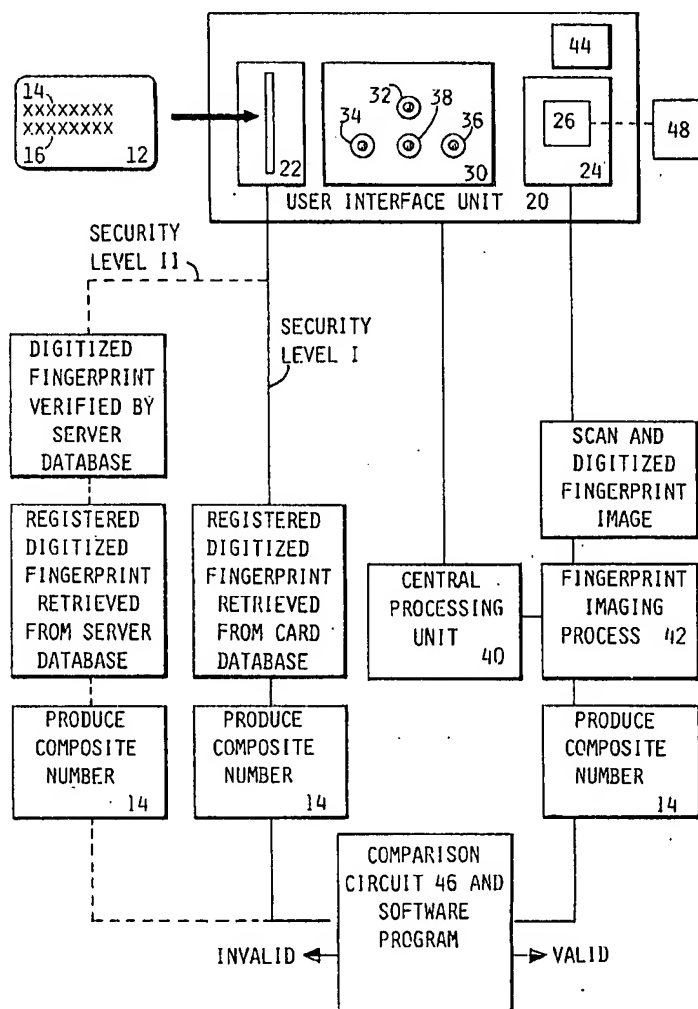
[51] Int. Cl.⁶ G06K 05/00

[52] U.S. Cl. 235/380

[58] Field of Search 235/380, 382, 235/382.5; 380/25, 49, 54, 59

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Primary Examiner—Le Thien Minh**6 Claims, 11 Drawing Sheets**


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1 Information leakage from optical emanations



Joe Loughry, David A. Umphress

 August 2002 **ACM Transactions on Information and System Security (TISSEC)**, Volume 5
Issue 3

Publisher: ACM Press

 Full text available: pdf(382.77 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A previously unknown form of compromising emanations has been discovered. LED status indicators on data communication equipment, under certain conditions, are shown to carry a modulated optical signal that is significantly correlated with information being processed by the device. Physical access is not required; the attacker gains access to all data going through the device, including plaintext in the case of data encryption systems. Experiments show that it is possible to intercept data under ...

Keywords: COMINT, COMSEC, EMSEC, SIGINT, TEMPEST, communication, compromising emanations, covert channel, encryption, fiber optics, information displays, light emitting diode (LED)



2 Security, privacy and anonymity: Privacy preserving multi-factor authentication with biometrics



Abhilasha Bhargav-Spantzel, Anna Squicciarini, Elisa Bertino

 November 2006 **Proceedings of the second ACM workshop on Digital identity management DIM '06**

Publisher: ACM Press

 Full text available: pdf(228.45 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

An emerging approach to the problem of reducing the identity theft is represented by the adoption of biometric authentication systems. Such systems however present several challenges, related to privacy, reliability, security of the biometric data. Interoperability is also required among the devices used for the authentication. Moreover, very often biometric authentication in itself is not sufficient as a conclusive proof of identity and has to be complemented with multiple other proofs ...

Keywords: authentication, biometrics, identity theft prevention, privacy



3 The SNAP-1 parallel AI prototype

R. F. DeMara, D. I. Moldovan



April 1991 **ACM SIGARCH Computer Architecture News , Proceedings of the 18th annual international symposium on Computer architecture ISCA '91**, Volume 19 Issue 3

Publisher: ACM Press

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1 [Security, privacy and anonymity: Privacy preserving multi-factor authentication with biometrics](#)



Abhilasha Bhargav-Spantzel, Anna Squicciarini, Elisa Bertino

November 2006 **Proceedings of the second ACM workshop on Digital identity management DIM '06**

Publisher: ACM Press

Full text available: [pdf\(228.45 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

An emerging approach to the problem of reducing the identity theft is represented by the adoption of biometric authentication systems. Such systems however present several challenges, related to privacy, reliability, security of the biometric data. Interoperability is also required among the devices used for the authentication. Moreover, very often biometric authentication in itself is not sufficient as a conclusive proof of identity and has to be complemented with multiple other proofs ...

Keywords: authentication, biometrics, identity theft prevention, privacy

2 [Social Issues: Hopeful design: making the world a better place](#)



Matt Jones

January 2002 **ACM SIGCHI Bulletin - a supplement to interactions**, Volume 2002

Publisher: ACM Press

Full text available: [pdf\(267.75 KB\)](#) Additional Information: [full citation](#)

3 [Risks to the public: Risks to the public in computers and related systems](#)



Peter G. Neumann

March 2003 **ACM SIGSOFT Software Engineering Notes**, Volume 28 Issue 2

Publisher: ACM Press

Full text available: [pdf\(221.43 KB\)](#) Additional Information: [full citation](#), [citations](#)


4 [Biometrics: possible safe haven or lost cause?](#)



Patrick Kosciuk

March 2005 **ACM SIGCAS Computers and Society**, Volume 35 Issue 1

Publisher: ACM Press

Full text available:  [html\(17.14 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

5 [Trends for 2005](#)



Aaron Weiss

December 2004 **netWorker**, Volume 8 Issue 4

Publisher: ACM Press

Full text available:  [pdf\(80.15 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)
 [html\(29.15 KB\)](#)

A fractured landscape of technological innovations reveals that now, more than ever, we're all connected

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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [blue-c: a spatially immersive display and 3D video portal for telepresence](#)

Markus Gross, Stephan Würmlin, Martin Naef, Edouard Lamboray, Christian Spagno, Andreas Kunz, Esther Koller-Meier, Tomas Svoboda, Luc Van Gool, Silke Lang, Kai Strehlike, Andrew Vande Moere, Oliver Staadt

July 2003 **ACM Transactions on Graphics (TOG) , ACM SIGGRAPH 2003 Papers****SIGGRAPH '03**, Volume 22 Issue 3**Publisher:** ACM Press

Full text available: pdf(31.68 MB)

mov(28:33 MIN)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We present *blue-c*, a new immersive projection and 3D video acquisition environment for virtual design and collaboration. It combines simultaneous acquisition of multiple live video streams with advanced 3D projection technology in a CAVE™-like environment, creating the impression of total immersion. The blue-c portal currently consists of three rectangular projection screens that are built from glass panels containing liquid crystal layers. These screens can be switched from a white ...

Keywords: 3D Video, graphics hardware, real-time graphics, spatially immersive displays, virtual environments

2 [Design of C++ classes and functions to model non-game interfacing applications of the inputs of a joy port \(tutorial presentation\)](#)

Lee R. Clendenning

 October 2000 **Journal of Computing Sciences in Colleges , Proceedings of the second annual CCSC on Computing in Small Colleges Northwestern conference , Proceedings of the fourteenth annual consortium on Small Colleges Southeastern conference CCSC '00**, Volume 16 Issue 2
Publisher: Consortium for Computing Sciences in Colleges

Full text available: pdf(28.28 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A summary and demonstration of the synthesis of C++ classes and functions which would model non-game applications of a traditional joy port of the IBM compatible personal computer. A classic security alarm system with multiple zones circuits hardwired to the port will be used as an application example. The generic physical/electrical provisions and characteristics of the port for digital and analog inputs are reviewed with schematic diagrams. Applicable functions from the C++ libraries, conio ...

Visualization of a closed three-dimensional surface using portal-based rendering

Michael Bui, Nick Lowe, Masahiro Takatsuka

January 2006 **Proceedings of the 2006 Asia-Pacific Symposium on Information Visualisation - Volume 60 APVis '06**

Publisher: Australian Computer Society, Inc.

Full text available:  [pdf\(398.20 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The complexity and size of data is rapidly increasing in modern science, business and engineering. This has resulted in increasing demands for more sophisticated data analysis methods. Multidimensional scaling has been used to visualize large high-dimensional datasets in the form of a map. Such maps are very intuitive for us, as we are familiar with reading geographical maps. However, they typically result in a flat space (world), which presents undefined discontinuous edges at the end of the wo ...

Keywords: closed 3D surface, geodesic Dome, portal-based rendering, self-Organizing Map., visualization



4 Industrial experience with building a web portal product line using a lightweight, reactive approach



Ulf Pettersson, Stan Jarzabek

September 2005 **ACM SIGSOFT Software Engineering Notes , Proceedings of the 10th European software engineering conference held jointly with 13th ACM SIGSOFT international symposium on Foundations of software engineering ESEC/FSE-13**, Volume 30 Issue 5

Publisher: ACM Press

Full text available:  [pdf\(1.04 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Imprecise, frequently changing requirements and short time-to-market create challenges for application of conventional software methods in Web Portal engineering. To address these challenges, ST Electronics (Info-Software Systems) Pte. Ltd. applied a lightweight, reactive approach to support a Web Portal product line. Unique characteristics of the approach were fast, low-cost migration from a single conventional Web Portal towards a reusable "generic Web Portal" solution, effective handling of l ...

Keywords: maintenance, program synthesis, reuse, software product lines, static meta-programming, web engineering



5 Session 35: power-constrained design for multimedia: Minimization for LED-backlit TFT-LCDs



Wei-Chung Cheng, Chain-Fu Chao

July 2006 **Proceedings of the 43rd annual conference on Design automation DAC '06**

Publisher: ACM Press

Full text available:  [pdf\(772.28 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents an algorithm for minimizing power consumption of LED backlights in transmissive TFT-LCD monitors. The proposed algorithm reduces power consumption by scaling the luminous intensity of the red, green, and blue LED backlights independently according to the image histograms of each color channel. The algorithm consists of two phases. The first phase, chromaticity scaling, finds the optimal ratios of red, green, and blue backlights subject to a perceived color difference constraint ...

Keywords: CIELAB color difference, LED backlight, TFT-LCD power minimization, chromaticity-luminance scaling

6 How to port Linux when the hardware turns soft

David Lynch

January 2007 **Linux Journal**, Volume 2007 Issue 153

Publisher: Specialized Systems Consultants, Inc.

Full text available:  [html\(287.14 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Soul of the Pico machines



7 Power management and application specific architectures: Temporal vision-guided energy minimization for portable displays



Wei-Chung Cheng, Chih-Fu Hsu, Chain-Fu Chao

October 2006 **Proceedings of the 2006 international symposium on Low power electronics and design ISLPED '06**

Publisher: ACM Press

Full text available:  [pdf\(1.35 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents a novel backlight driving technique for liquid crystal displays. By scaling the intensity, frequency, and duty cycle of the backlight, this technique not only increases the perceived brightness but also prolongs the service time of rechargeable batteries. The increased brightness comes from a perceptual effect of temporal vision - a brief flash appears brighter than a steady light of the same intensity, called Brücke brightness enhancement effect. The prolonged service t ...

Keywords: TFT-LCD, backlight management, power minimization, temporal vision

8 Experience: Development of an electronic commerce portal system using a specific software development process



Volker Gruhn, Martin Mocker, Lothar Schöpe

February 2002 **Proceedings of the Fortieth International Conference on Tools Pacific: Objects for internet, mobile and embedded applications CRPIT '02**

Publisher: Australian Computer Society, Inc.

Full text available:  [pdf\(979.88 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The development of electronic commerce (EC) systems is subject to different conditions than that of conventional software systems. Consequently, software development processes used for conventional systems to date need to be adapted to these new conditions. This includes the introduction of new activities to the development process and the removal of others. In addition, the roles involved in the development process, their tasks, qualifications and the software tools used by them, are different ...

Keywords: application integration, component based development, distributed architecture design, electronic commerce, software development process

9 Classics in software engineering



January 1979 Divisible Book

Publisher: Yourdon Press

Full text available:  [pdf\(22.45 MB\)](#) Additional Information: [full citation](#), [cited by](#), [index terms](#)

10 European air traffic flow management: porting a large application to GNU/linux



Gaetan Allaert, Dirk Craeynest, Philippe Waroquiers

December 2003 **ACM SIGAda Ada Letters , Proceedings of the 2003 annual ACM**

SIGAda international conference on Ada: the engineering of correct and reliable software for real-time & distributed systems using ada and related technologies SigAda '03, Volume XXIV Issue 1

Publisher: ACM Press

Full text available:  pdf(163.61 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Computer hardware evolves very quickly. To benefit from cheaper and more powerful systems, big applications have to be ported to new environments. The Ada language has been designed for portability, making such migrations easier. However, today's applications often complement their main implementation language by various extra technologies: shell scripts, direct usage of OS primitives, different programming languages to access some libraries e.g. for graphical user interfaces, etc. These technol ...

Keywords: Ada, C, C++, CFMU, COTS, ETFMS, GNAT, GNU, HP-PA RISC, HP-UX, Korn shell, POSIX, air traffic management, eurocontrol, intel 80x86, linux, performance, portability


11 Participatory design of a portable torque-feedback device



Michael Good

June 1992 **Proceedings of the SIGCHI conference on Human factors in computing systems CHI '92**

Publisher: ACM Press

Full text available:  pdf(859.53 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Customer-driven design processes such as participatory design can be used to develop new presence, or virtual reality, technology. Chemists worked together with computer company engineers to develop scenarios for how present technology could be used to support future molecular modeling work in drug design. These scenarios led to the development of a portable torque-feedback device which can be used with either workstation or virtual reality technology. This paper discusses both the experien ...

Keywords: chemistry, force feedback, molecular modeling, participatory design, presence, virtual reality

12 Driving me nuts



Greg Kroah-Hartman

April 2004 **Linux Journal**, Volume 2004 Issue 120

Publisher: Specialized Systems Consultants, Inc.

Full text available:  html(20.10 KB) Additional Information: [full citation](#), [abstract](#)

Writing a Simple USB Driver

13 Applications session 5: multimedia applications potpourri: Electronic clipping system with invisible barcodes



Koichi Kamijo, Noboru Kamijo, Masaharu Sakamoto

October 2006 **Proceedings of the 14th annual ACM international conference on Multimedia MULTIMEDIA '06**

Publisher: ACM Press

Full text available:  pdf(1.11 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The Internet, digital television, and similar technologies have accelerated the speed of digitalization. Nevertheless, paper media forms, such as newspapers and magazines, still have large market shares, and the authors believe that these two worlds, digital and

analog, will coexist even in the future, with their own market areas. However, the demands to connect between these two worlds are increasing, and barcodes and watermarking are examples of technologies used to connect them. However, a ba ...

Keywords: 2D bar code, QR code, cell phone, invisible ink, ubiquitous, uv LED

14 A history of the SNOBOL programming languages



Ralph E. Griswold

January 1978 **ACM SIGPLAN Notices , The first ACM SIGPLAN conference on History of programming languages HOPL-I**, Volume 13 Issue 8

Publisher: ACM Press

Full text available: [pdf\(3.56 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Development of the SNOBOL language began in 1962. It was followed by SNOBOL2, SNOBOL3, and SNOBOL4. Except for SNOBOL2 and SNOBOL3 (which were closely related), the others differ substantially and hence are more properly considered separate languages than versions of one language. In this paper historical emphasis is placed on the original language, SNOBOL, although important aspects of the subsequent languages are covered.

15 HTTP Cookies: Standards, privacy, and politics



David M. Kristol

November 2001 **ACM Transactions on Internet Technology (TOIT)**, Volume 1 Issue 2

Publisher: ACM Press

Full text available: [pdf\(390.38 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

How did we get from a world where cookies were something you ate and where "nontechies" were unaware of "Netscape cookies" to a world where cookies are a hot-button privacy issue for many computer users? This article describes how HTTP "cookies" work and how Netscape's original specification evolved into an IETF Proposed Standard. I also offer a personal perspective on how what began as a straightforward technical specification turned into a political flashpoint when it tried to address nontech ...

Keywords: Cookies, HTTP, World Wide Web, privacy, state management

16 An energy-conscious algorithm for memory port allocation



Preeti Ranjan Panda, Lakshmikantam Chitturi

November 2002 **Proceedings of the 2002 IEEE/ACM international conference on Computer-aided design ICCAD '02**

Publisher: ACM Press

Full text available: [pdf\(111.21 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Multiport memories are extensively used in modern system designs because of the performance advantages they offer. The increased memory access throughput could lead to significantly faster schedules in behavioral synthesis. However, they also have an associated area and energy penalty. We describe a technique for mapping data accesses to multiport memories during behavioral synthesis that results in significantly better energy characteristics than an unoptimized multiport design. The technique c ...

17 Reality portals



Karl-Petter Åkesson, Kristian Simsarian

December 1999 **Proceedings of the ACM symposium on Virtual reality software and technology VRST '99**

Publisher: ACM Press

Full text available:  pdf(1.58 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Through interactive augmented virtuality we provide the ability to interactively explore a remote space inside a virtual environment. This paper presents a tool and technique that can be used to create such virtual worlds that are augmented by video textures taken of real world objects. The system constructs and updates, in near real-time, a representation of the user-defined salient and relevant features of the real world. This technique has the advantage of constructing a virtual world th ...

Keywords: augmented virtuality, collaborative virtual environments, environment visualization, teleoperation, video textures

18 Optimal privacy and authentication on a portable communications system



Ulf Carlsen

July 1994 **ACM SIGOPS Operating Systems Review**, Volume 28 Issue 3

Publisher: ACM Press

Full text available:  pdf(699.70 KB) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Beller, Chang and Yacobi [2] have recently proposed a set of secret key and public key protocols to meet authentication and privacy requirements for conversation set-up protocols for the initiating party of portable communication systems. This paper improves upon the protocols to obtain a higher assurance of authentication and key distribution. Conversation set-up protocols for the responding party are discussed, a public key protocol providing end-to-end authentication and privacy is described, ...

19 Modeling methodology a: Foundations of multi-paradigm modeling and simulation: a port ontology for automated model composition



Vei-Chung Liang, Christiaan J. J. Paredis

December 2003 **Proceedings of the 35th conference on Winter simulation: driving innovation WSC '03**

Publisher: Winter Simulation Conference

Full text available:  pdf(489.77 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We study the concept of ports and we define an ontology for representing them. Ports define the locations of interaction at the boundaries of components or sub-systems; they can be used across different disciplines for both product modeling and simulation. They are therefore a convenient abstraction that allows simulation modelers to modularize and encapsulate their system descriptions such that configurations of port-based product models can be used to generate multiple simulation models ...

20 Virtual reality II: Portals: increasing visibility in virtual worlds



Ioannis Kotziampasis, Nathan Sidwell, Alan Chalmers

April 2003 **Proceedings of the 19th spring conference on Computer graphics SCCG '03**

Publisher: ACM Press

Full text available:  pdf(146.66 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Distributed virtual environments offer an efficient way of creating complex 3D worlds. However, navigation within these virtual environments can be significantly hampered by the lack of visibility between parts of the world which are on different machines. This paper describes the use of portals to connect the distributed virtual environments in a way that the interconnected virtual environment will be visible from different machines. A psychophysical experiment is presented which investigates u ...

Keywords: VRML, distributed virtual environments, portals, user navigation

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1 [A user interface using fingerprint recognition: holding commands and data objects on fingers](#)



Atsushi Sugiura, Yoshiyuki Koseki

November 1998 **Proceedings of the 11th annual ACM symposium on User interface software and technology UIST '98**

Publisher: ACM Press

Full text available: [pdf\(226.02 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: fingerprint recognition, input devices, multimodal user interfaces, multi-computer user interfaces

2 [Applications I: Secure fingerprint-based authentication for Lotus Notes®](#)



Nalini K. Ratha, Jonathan H. Connell, Ruud M. Bolle

October 2001 **Proceedings of the 2001 workshop on Multimedia and security: new challenges MM&Sec '01**

Publisher: ACM Press

Full text available: [pdf\(731.41 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Fingerprints have been used to recognize people for several decades. The advent of low cost inkless fingerprint scanners coupled with extra compute power available in client workstations, biometrics in general and fingerprints in particular are being considered for many secure authentication applications. Lotus Notes is a groupware supporting email access and other activities such as calendar management included in it. In this paper, we describe the architecture of a system that integrates bo ...

3 [Late breaking result papers: FingerSense: augmenting expressiveness to physical pushing button by fingertip identification](#)



Jingtao Wang, John Canny

April 2004 **CHI '04 extended abstracts on Human factors in computing systems CHI '04**

Publisher: ACM Press

Full text available: [pdf\(284.80 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we propose a novel method, *FingerSense* to enhance the expressiveness of physical buttons. In a *FingerSense* enabled input device, a pressing action is differentiated according to the finger involved. We modeled the human performance of *FingerSense*

interfaces and derived related parameters from a preliminary usability study. Overall findings indicate that *FingerSense* is faster compared with traditional keypads when the finger switching action could be par ...

Keywords: fingerprint recognition, input device, mobile computing, performance modeling, text input

4 Design expo: Use of video in user interfaces that require non-linguistic cues



Sam Racine, Rachel Nilsson

April 2005 **CHI '05 extended abstracts on Human factors in computing systems CHI '05**

Publisher: ACM Press

Full text available: pdf(1.28 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This case study describes the creation of a user interface for a self-service kiosk that collects biographic and biometric data from non-English-speaking individuals who are unfamiliar with American/Western culture, with little formal education, and little-to-no experience with computers. The users were also completely unfamiliar with the task and in a very stressful environment. Therefore, unlike most commercial software interfaces that "tell" users how to complete a task by relying on entry fi ...

Keywords: usability, user interface design, video

5 Work-in-progress: Does habituation affect fingerprint quality?



Mary Theofanos, Ross Micheals, Jean Scholtz, Emile Morse, Peter May

April 2006 **CHI '06 extended abstracts on Human factors in computing systems CHI '06**

Publisher: ACM Press

Full text available: pdf(379.46 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Interest in the environmental factors that affect biometric image quality is increasing as biometric technologies are currently being implemented in various business applications. This study aims to determine, through repeated trials, the effects of various external factors on the image quality and usability of prints collected by an electronic reader. These factors include age and gender but also the absence or presence of immediate feedback. A key factor in biometric systems that will be used ...

Keywords: biometrics, feedback, fingerprint image quality, habituation

6 Assurance in life/nation critical endeavors: Biometrics or ... biohazards?



John Michael Williams

September 2002 **Proceedings of the 2002 workshop on New security paradigms NSPW '02**

Publisher: ACM Press

Full text available: pdf(1.17 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

IPSE DIXIT Biometrics as an array of deployable technologies presumes an elaborate infrastructure, including underlying science that justifies its claims of detection, classification, identification and authentication of individual human identities; particularly of those who are runaways, illegal immigrants, fugitives, criminals, terrorists, and so on. This will now too often be literally a matter of life and death, both for the public and the individuals identified. The "New Security Paradigm" em ...

7 Reviewed articles: The devil and packet trace anonymization



Ruoming Pang, Mark Allman, Vern Paxson, Jason Lee

January 2006 **ACM SIGCOMM Computer Communication Review**, Volume 36 Issue 1

Publisher: ACM Press

Full text available: [pdf\(119.06 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Releasing network measurement data---including packet traces---to the research community is a virtuous activity that promotes solid research. However, in practice, releasing anonymized packet traces for public use entails many more vexing considerations than just the usual notion of how to scramble IP addresses to preserve privacy. Publishing traces requires carefully balancing the security needs of the organization providing the trace with the research usefulness of the anonymized trace. In thi ...

8 National id card: the next generation: The US/Mexico border crossing card (BCC): a case study in biometric, machine-readable id



Andrew Schulman

April 2002 **Proceedings of the 12th annual conference on Computers, freedom and privacy CFP '02**

Publisher: ACM Press

Full text available: [htm\(187.31 KB\)](#) Additional Information: [full citation](#), [index terms](#)

9 Security, privacy and anonymity: Privacy preserving multi-factor authentication with biometrics



Abhilasha Bhargav-Spantzel, Anna Squicciarini, Elisa Bertino

November 2006 **Proceedings of the second ACM workshop on Digital identity management DIM '06**

Publisher: ACM Press

Full text available: [pdf\(228.45 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

An emerging approach to the problem of reducing the identity theft is represented by the adoption of biometric authentication systems. Such systems however present however several challenges, related to privacy, reliability, security of the biometric data. Inter-operability is also required among the devices used for the authentication. Moreover, very often biometric authentication in itself is not sufficient as a conclusive proof of identity and has to be complemented with multiple other proofs ...

Keywords: authentication, biometrics, identity theft prevention, privacy

10 An experimental laboratory for pattern recognition and signal processing



N. M. Herbst, P. M. Will

April 1972 **Communications of the ACM**, Volume 15 Issue 4

Publisher: ACM Press

Full text available: [pdf\(2.02 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

An interactive computer-controlled scanning and display system has been in operation at the IBM Thomas J. Watson Research Center for three years. The system includes two flying-spot scanners and a TV camera specially interfaced to a process control digital computer, dot-mode and vector displays, analog input and output facilities, and a variety of other experimental equipment. The system design and programming support are described and typical applications in scanner control, optical charac ...

Keywords: image processing, interactive terminal, pattern recognition, pseudorandom displays, scanners

11 Risks to the public: Risks to the public

Peter G. Neumann

May 2005 **ACM SIGSOFT Software Engineering Notes**, Volume 30 Issue 3**Publisher:** ACM PressFull text available: [pdf\(177.87 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Edited by Peter G. Neumann (Risks Forum Moderator and Chairman of the ACM Committee on Computers and Public Policy), plus personal contributions by others, as indicated. Opinions expressed are individual rather than organizational, and all of the usual disclaimers apply. We address problems relating to software, hardware, people, and other circumstances relating to computer systems. To economize on space, we include pointers to items in the online Risks Forum: (R i j) denotes RISKS vol i number ...

12 Polygonal approximations that minimize the number of inflections

John D. Hobby

January 1993 **Proceedings of the fourth annual ACM-SIAM Symposium on Discrete algorithms SODA '93****Publisher:** Society for Industrial and Applied MathematicsFull text available: [pdf\(1.12 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**13** Security III: Experiential learning and security lab design

Ed Crowley

October 2004 **Proceedings of the 5th conference on Information technology education CITC5 '04****Publisher:** ACM PressFull text available: [pdf\(169.30 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Awareness of the need for Information Systems Security continues to expand. This expansion has created a need for security focused lab modules. By design, these lab modules should optimize student learning experiences. Incorporating Kolb's experiential learning model helps assure an optimum learning experience. This paper, presents procedures and methodologies utilized in developing security lab modules. These modules illustrate the application of Kolb's experiential learning model.

Keywords: TCP/IP, internet security, lab design, network security**14** Risks to the public: Risks to the public in computers and related systems

Peter G. Neumann

September 2004 **ACM SIGSOFT Software Engineering Notes**, Volume 29 Issue 5**Publisher:** ACM PressFull text available: [pdf\(105.37 KB\)](#) Additional Information: [full citation](#), [abstract](#)

Edited by Peter G. Neumann (Risks Forum Moderator and Chairman of the ACM Committee on Computers and Public Policy), plus personal contributions by others, as indicated. Opinions expressed are individual rather than organizational, and all of the usual disclaimers apply. We address problems relating to software, hardware, people, and other circumstances that affect computer systems. To economize on space, we tersify most items and include pointers to items in the online Risks Forum: (R i j) deno ...

15 Collaboration at work: Exploring patterns of social commonality among file directories**at work**

John C. Tang, Clemens Drews, Mark Smith, Fei Wu, Alison Sue, Tessa Lau

April 2007 **Proceedings of the SIGCHI conference on Human factors in computing systems CHI '07****Publisher:** ACM PressFull text available:  [pdf\(495.98 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We studied files stored by members of a work organization for patterns of social commonality. Discovering identical or similar documents, applications, developer libraries, or other files may suggest shared interests or experience among users. Examining actual file data revealed a number of individual and aggregate practices around file storage. For example, pairs of users typically have many (over 13,000) files in common. A prototype called LiveWire exploits this commonality to make file bac ...

Keywords: CSCW, enterprise work setting, file management, social networking, social recommendation, usage logs

16 Point-based computer graphics


Marc Alexa, Markus Gross, Mark Pauly, Hanspeter Pfister, Marc Stamminger, Matthias Zwicker

August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04****Publisher:** ACM PressFull text available:  [pdf\(8.94 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#)

This course introduces points as a powerful and versatile graphics primitive. Speakers present their latest concepts for the acquisition, representation, modeling, processing, and rendering of point sampled geometry along with applications and research directions. We describe algorithms and discuss current problems and limitations, covering important aspects of point based graphics.

17 Survey of network weapons part 1: weapons for profiling


Linda S. Grubb, Luis Cuéllar

April 2004 **Journal of Computing Sciences in Colleges**, Volume 19 Issue 4**Publisher:** Consortium for Computing Sciences in CollegesFull text available:  [pdf\(34.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The rise of the Internet has been a boon for Computer Science and the world economy. It has redefined the way technology and information is viewed. But it also has given rise to new types of crimes as well as to new types of criminals. These criminals organize themselves along familiar structures and hierarchies. These organizations share knowledge and develop tools and new weapons, which they use to breach the most sophisticated security mechanisms. This has made Information Security a must for...

18 PG13-designing games: Designing opportunities to spark and nurture scientific inquiry in middle school girls

Kristin Hughes

November 2005 **Proceedings of the 2005 conference on Designing for User eXperience DUX '05****Publisher:** AIGA: American Institute of Graphic ArtsFull text available:  [pdf\(7.35 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Our project, Click! Urban Adventure, was designed to immerse middle school girls in an interactive, mixed-reality game that provides them with the tools they need to learn discipline-specific science, technology, engineering, and mathematics (STEM) skills. The 11 to 14 year old girls who participated in Click! used the city as their game board and

STEM components as their tools. As part of the game, the girls take on the role of Click! Special Agents as they think, talk and reason their way towa ...

Keywords: augmented reality, children, games, interaction design, interdisciplinary design, live performance, user-centered design, visual design

19 Bioinformatics—an introduction for computer scientists



Jacques Cohen

June 2004 **ACM Computing Surveys (CSUR)**, Volume 36 Issue 2

Publisher: ACM Press

Full text available: [pdf\(261.56 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The article aims to introduce computer scientists to the new field of bioinformatics. This area has arisen from the needs of biologists to utilize and help interpret the vast amounts of data that are constantly being gathered in genomic research---and its more recent counterparts, proteomics and functional genomics. The ultimate goal of bioinformatics is to develop in silico models that will complement in vitro and in vivo biological experiments. The article provides a bird's eye view of the ...

Keywords: DNA, Molecular cell biology, RNA and protein structure, alignments, cell simulation and modeling, computer, dynamic programming, hidden-Markov-models, microarray, parsing biological sequences, phylogenetic trees

20 Columns: Risks to the public in computers and related systems



Peter G. Neumann

March 2002 **ACM SIGSOFT Software Engineering Notes**, Volume 27 Issue 2

Publisher: ACM Press

Full text available: [pdf\(1.54 MB\)](#) Additional Information: [full citation](#)

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